

REMARKS

In response to the above-identified Office Action, Applicants seek reconsideration thereof. In this response, Applicants neither amend nor add any new claims. Accordingly, Claims 4-6, 9-11, 14-16 and 19-22 are pending.

I. Claims Rejected Under 35 U.S.C. §102(b)

The Examiner rejects Claims 4-5, 9-10, 14-15 and 22 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,641,922 to Lee, et al. ("Lee"). Applicants respectfully traverse the rejection.

In order to anticipate a claim, the relied upon reference must disclose every limitation of the claim. Among other limitations, independent Claim 4 recites an interconnection comprising an aluminum-copper-titanium alloy layer containing about 0.1 atomic percent titanium.

In making the rejection, the Examiner relies on Lee to show an interconnect containing an aluminum-copper-titanium alloy layer. Lee discloses 0.15% titanium but does not disclose whether this is atomic percent or weight percent. 35 U.S.C. 102(b) requires that every limitation be disclosed by the relied upon reference and Lee does not disclose an aluminum-copper-titanium alloy layer containing about 0.1 atomic percent titanium. Therefore, Lee does not read on Claim 4.

Accordingly, Applicant respectfully requests withdrawal of the rejection of independent Claim 4. Claims 5 and 22 depend from claim 4 and are not anticipated at least for the same reasons as claim 4.

Regarding the rejection of independent claim 9, Applicants respectfully submit that claim 9 recites the limitation "wherein the aluminum-copper-titanium alloy layer contains 0.1 atomic percent titanium" similar to claim 4 above. Accordingly, for the reasons stated with respect to independent claim 4, independent claim 9 is not anticipated by Lee. Claim 10 depends from claim 9 and is not anticipated at least for the same reasons as claim 9.

Regarding the rejection of independent claim 14, Applicants respectfully submit that claim 14 recites the limitation "wherein the aluminum-copper-titanium alloy layer contains 0.1 atomic percent titanium" similar to claims 4 and 9 above. Accordingly, for the reasons stated with respect

to independent claims 4 and 9, independent claim 14 is not anticipated by Lee. Claim 15 depends from claim 14 and is not anticipated at least for the same reasons as claim 14.

II. Claims Rejected Under 35 U.S.C. §103(a)

The Examiner rejects claims 4-5, 9-10, 14-15 and 22 under 35 U.S.C. 103(a) as being obvious over Lee. Also, the Examiner rejects claims 6, 11, 16 and 19-21 under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,635,763 to Inoue et al. ("Inoue"). Applicants respectfully traverse these rejections.

In order to render a claim obvious, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art.

Among other limitations, independent Claim 4 recites an interconnection comprising an aluminum-copper-titanium alloy layer containing about 0.1 atomic percent titanium.

In making the rejection, the Examiner refers to Lee's disclosure of 0.15% titanium and the atomic percent of copper in the alloy to read on independent claim 4. Also, the Examiner states that Lee's disclosure is close enough since discovering the optimum or workable ranges involves only routine skill in the art.

Applicants respectfully submit that Lee fails to disclose the claimed amount of titanium (about 0.1 atomic percent), because Lee only discloses titanium in an amount of 0.15%. In addition, as previously stated in Applicant's response to Office Action dated January 25, 2000, Lee teaches away from an aluminum-copper-titanium alloy since Lee teaches that this alloy, at the percentages given, offers the worst electromigration performance. Therefore, one skilled in the art would not have expected Lee to disclose the same properties as claim 4. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 4.

Regarding the rejection of independent claim 9, Applicants respectfully submit that claim 9 recites the limitation "wherein the aluminum-copper-titanium alloy layer contains 0.1 atomic percent titanium" similar to claim 4 above. Accordingly, for the reasons stated with respect to independent claim 4, independent claim 9 is not obvious over the cited references. Claim 10 depends from claim 9 and is not obvious at least for the same reasons as claim 9.

Regarding the rejection of independent claim 14, Applicants respectfully submit that claim 14 recites the limitation "wherein the aluminum-copper-titanium alloy layer contains 0.1 atomic percent titanium" similar to claims 4 and 9 above. Accordingly, for the reasons stated with respect to independent claims 4 and 9, independent claim 14 is not obvious over the cited references. Claim 15 depends from claim 14 and is not obvious at least for the same reasons as claim 14.

Regarding the rejection of dependent claim 6, this claim depends from independent claim 4. The same reasoning addressed above with regard to independent claim 4 is applicable to claim 6. Therefore, claim 6 is not obvious over the cited references at least for the same reasons as claim 4. Therefore, Applicants respectfully request withdrawal of the rejection of claim 6.

Regarding the rejection of dependent claim 11, this claim depends from independent claim 9. The same reasoning addressed above with regard to independent claims 4 and 9 is applicable to claim 11. Therefore, claim 11 is not obvious over the cited references at least for the same reasons as claims 4 and 9. Therefore, Applicants respectfully request withdrawal of the rejection of claim 11.

Regarding the rejection of independent claim 16, as addressed above, Lee teaches away from an aluminum-copper-titanium alloy since Lee teaches that this alloy offers the worst electromigration performance, with straight aluminum-copper alloys offering much better performance. Thus, one skilled in the art would not have expected Lee to disclose the same properties as claim 16. Therefore, claim 16 is not obvious over the cited references. Accordingly, Applicant respectfully requests withdrawal of the rejection of independent claim 16.

Claims 19-21 depend from independent claim 16 and are not obvious for at least for the same reasons as independent claim 16. Therefore, Applicants respectfully request withdrawal of the rejection of claims 19-21.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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CERTIFICATE OF MAILING:

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 4, 2003.

Nadya Gordon 8/7/03
Nadya Gordon Date